



Highlights of the Locomotive Horn Rule

RSAC

May 18, 2005



Overview

- **Final Rule on Use of Locomotive Horns at Highway-Rail Grade Crossings was published April 27, 2005**
- **Rule describes specific steps communities can take to create quiet zones**



Overview

- **Three objectives—**
 - **Ensure a high level of public safety;**
 - **Respond to the many communities that have continued to press for relief from unwanted train horn noise**
 - **Take into consideration the interests of localities with *existing* whistle bans**



What the Rule Does

- **Requires trains approaching public crossings to sound horn to provide warning**
 - **Time-based pattern (15-20 seconds)**
 - **Horns may not be sounded more than $\frac{1}{4}$ mile from crossing**



Horn Testing

- Retain minimum horn volume - 96 dB(A) at 100'
- Add maximum – 110 dB(A) at 100'
- New test protocol: 15 ft. above top of rail (vice 4 feet)
 - Accounts for “Shadow Effect”
 - May reduce horn volumes

Overall effect is a significant reduction in train horn noise in communities (3.4M of the 9M impacted by train horns)



What's new in the Final Rule?

- Pedestrian crossings
- Partial (less than 24-hour) Quiet Zones
- Pre-existing SSMs
- Intermediate Quiet Zones
- Notification comment periods



Notifications

- **Notice of Intent (new QZ)**
- **Notice of QZ Continuation (pre-rule & intermediate QZs)**
- **Notice of Detailed Plan (pre-rule QZ not automatically qualified)**
- **Notice of QZ Establishment**



Quiet Zones: Three Types

- **Pre-Rule Quiet Zones:**
 - Areas without train horns on October 9, 1996 and on December 18, 2003
- **Intermediate Quiet Zones**
 - Areas without train horns after October 9, 1996 and before December 18, 2003
- **New Quiet Zones**
 - Quiet Zones that do not qualify as Pre-Rule or Intermediate Quiet Zones



QZ Qualifying Conditions

- SSMs at each public crossing
- $QZRI \leq NSRT$ without additional safety measures
- $QZRI \leq NSRT$ with additional safety measures
- $QZRI \leq RIWH$ - Safety measures reduce QZRI to risk level that would exist with horns (RIWH)



QZs by NSRT

- Annual review of QZ
 - Re-calculate NSRT
 - Re-calculate QZRI
- No guarantee that QZ will remain qualified
 - NSRT may drop below QZRI
 - QZRI may increase (collision, increased road or train traffic)
- 3 years to re-qualify
 - Extra costs



QZs with No Annual Review

- **SSMs at every crossing or safety measures fully compensate for lack of horn**
- **May have higher costs, but no annual reviews**
- **Greatest safety benefits**

Note: FRA may review any QZ at any time.



Risk at Pre-Rule Quiet Zones

Qualified for Automatic Approval if:

- $QZRI \leq NSRT$, or
- $QZRI \leq 2 * NSRT$, and no relevant collisions in past 5 years
- $QZRI \leq RIWH$



Alternative Safety Measures (ASM's)

- Non-complying SSM's (e.g. shorter traffic channelization devices)
- Photo enforcement
- Programmatic education and awareness
- Programmatic enforcement
- **Engineering treatments**

Education and enforcement options: must demonstrate a statistically significant improvement in effectiveness, and must be approved by the FRA.¹³



Pre-Existing SSMs

- **SSMs that comply with Appendix A**
- **Installed before Dec. 18, 2003**
- **Credit given by increasing RIWH to show what risk would have been without the pre-existing SSM**



Pre-Existing SSM Example

- Gated crossing with traffic channelization installed July 1999
- Effectiveness of channelization is 0.75
- Risk index = 10,000
- Risk index w/o channelization would have been 40,000
- 40,000 is used to compute RIWH



Partial QZs

- **Horns not sounded for a specific period of time each day.**
- **New and Pre-Rule Partial QZs must meet all of the requirements for 24 hour QZs.**
- **Risk is calculated the same way and over the entire 24 hour period**



New Partial QZs

- All open public crossings must have gates.
- Horn only silenced from 10 p.m. to 7 a.m.



Pre-Rule Partial QZs

- In effect on 10/9/96 and on 12/18/03
- May retain current no-whistle hours (e.g. 9:00 p.m. to 7:00 p.m.)
- Same qualification as 24 hour Pre-Rule QZ.
 - $QZRI \leq NSRT$
 - $QZRI \leq 2 * NSRT$ and no relevant collisions during no-whistle hours.
- Must provide required notification.



Intermediate QZ

- **Horn restrictions initiated after 10/9/96 but before 12/18/03.**
- **May be 24 hour or partial.**
- **Horns will remain silent for 1 year (6/24/06) if required notification is made.**
- **Other than the additional year, treated exactly like a New QZ.**



Notice of Intent

- **PA must provide written Notice of Intent to establish a New QZ to:**
 - All railroads operating over crossings
 - State highway and road safety agency
 - State agency responsible for crossing safety
- **Purpose – to provide opportunity for comments and recommendations to PA as it plans the QZ**
- **60 days to provide comments to PA**



Notice of Intent

- **No Notice of Intent – no QZ**
- **Provide it early in development process**
- **Helpful**
 - Expertise in crossing safety
 - Inventory information
 - Diagnostic review
- **State & railroad must be invited to diagnostic reviews**



Pedestrian Crossings

New QZs

- **Must have a diagnostic review and equipped per the recommendations.**
- **Must invite State agencies & railroads**
- **Minimum – signs advising pedestrians that train horns are not sounded.**
 - **MUTCD compliant**



Pedestrian Crossings

Pre-Rule QZs

- Equipped with MUTCD compliant signs by 6/24/08 advising that horns are not sounded.
- If QZ not qualified for automatic approval, pedestrian crossings
 - Diagnostic team review
 - Treated per team's recommendation



Notice of QZ Continuation (Pre-Rule)

- **Must be provided or horn will sound**
- **Must be sent by 6/3/05**
- **May be sent prior to knowing if QZ will automatically qualify or not.**
- **Establishment of a QZ by automatic approval must be done by 12/24/05**



FRA Assistance

- FRA personnel will be available to help local governments assess safety measures for their crossings
- FRA has provided a Quiet Zone Calculator can be used to develop and store multiple scenarios for each proposed Quiet Zone
- <http://safetydata.fra.dot.gov/quiet>



Final Rule

- Rule becomes effective June 24, 2005
- For additional information:
<http://www.fra.dot.gov>



Questions???